UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

28 AUG 2009

Colonel Robert D. Peterson
District Engineer
U.S. Army Corps of Engineers
Huntington District
502 Eighth Street
Huntington, West Virginia 25701-2070

Re: PN 2006-2196-GUY; Highland Mining Company;
George's Creek Surface Mine

Dear Colonel Peterson:

The U.S. Environmental Protection Agency (EPA) has reviewed the U.S. Army Corps of Engineers (Corps) public notice for Highland Mining Company's proposal to discharge dredged and/or fill material into a total of 4,220 linear feet of waters of the United States for the construction, operation, and reclamation of the George's Creek Surface Mine. To extract 650,000 tons of coal the applicant proposes to utilize contour, auger and highwall mining methods. The proposed project involves the construction of one permanent valley fill and one temporary in-stream drainage pond impacting 2,390 linear feet of intermittent streams. Contour mining activities will impact 968 linear feet of intermittent stream channel and 862 linear feet of ephemeral stream channel. The applicant proposed to compensate for unavoidable impacts through the creation, restoration and enhancement of stream channels on and off site.

The project is proposed in an unnamed tributary of George's Creek which flows into Dingess Run which is a tributary to the Guyandotte River. There are current mining activities within the Dingess Run sub-watershed. Adjacent to this proposed project is the existing George's Creek Surface Mine (SMCRA No. S-5002-01, Corps No. LRH-2006-2196). The proposed mine represents a 237.71 acre expansion of the existing operation, which according to the applicant the existing operation will continue even without authorization of this project. In EPA's review of this proposed project we are concerned that the project as proposed may not comply with the Clean Water Act Section 404(b)(1) Guidelines. Specific areas of concern include potential cumulative impacts within the sub-watershed, potential significant degradation of water quality, an adequate alternatives analysis to ensure avoidance and minimization of the water resources,, and the proposed mitigation plan.

The Clean Water Act Section 404(b)(1) Guidelines (40 C.F.R. Part 230) provide the substantive environmental criteria against which this application must be considered.

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Determination of Cumulative Effects on the Aquatic Ecosystem – 230.11(g)

The Section 404(b)(1) Guidelines require consideration of cumulative impacts: "[A]lthough the impact of a particular discharge may constitute a minor change in itself, the cumulative effect of numerous such piecemeal changes can result in a major impairment of the water resources and interfere with the productivity and water quality of the existing aquatic ecosystem." The data provided by the applicant indicates that the streams proposed to be filled are high quality headwaters streams. Headwaters streams are vital components of the aquatic ecosystem. Headwaters streams collectively provide high levels of water quality and quantity, sediment control, nutrients, and organic matter, and as a result, are largely responsible for maintaining the quality of downstream riverine systems. Even though ephemeral and intermittent streams may go dry during a portion of the year, they continue to provide habitat for macroinvertebrates and amphibians that utilize the interstitial water flows in the substrate below the stream.

In addition, the streams in the project area are providing clean freshwater dilution to the impaired Dingess Run. Further, this project in combination with other identified potential future projects represent a potential for the subwatershed to become 33% impacted by mining activities. EPA recommends that the Corps conduct a thorough cumulative effects analysis which includes a detailed presentation of past, present and reasonably foreseeable activities, fully analyzes the current state of the aquatic ecosystem and considers of the affects on the human environment including impacts to the subwatershed from the filling of streams that currently provide freshwater dilution and potential impacts private drinking wells and other drinking water supplies. This analysis should include at a minimum the cumulative effects of all reasonably foreseeable activities on water quality, loss of stream function and habitat and the effects of the hydrologic modifications to the watershed. It should also address the impact of deforestation on water quality, water quantity, and overall ecological conditions within the watershed. To the extent the Corps relies upon the State's Section 401 Certification or a Cumulative Hydrologic Impact Analysis ("CHIA"), the Corps' analysis should identify the specific language (including not only the conclusions but the underlying analysis) within the Section 401 Certification and/or CHIA that is relevant to the Corps' cumulative impact analysis.

Alternatives Analysis – 40 CFR 230.10(a)

According to the Section 404(b)(1) Guidelines, only the least environmentally damaging practicable alternative (LEDPA) can be permitted, and to identify the LEDPA, the applicant's alternatives analysis must examine a full range of alternatives that would avoid and minimize impacts to aquatic resources to the maximum extent practicable. The applicant's submitted alternatives analysis utilizes approximate original contour, but only looked at fill placement alternatives and various mining methods. Full consideration of alternatives under 230.10(a) not only includes geographic siting, but also alternatives in design. Such design modifications could include further backstacking of material, where appropriate from a mining safety and stability standpoint, and other best management practices that would reduce impacts to aquatic resources and protect water quality. To comply with the Guidelines' requirements on alternatives analysis, EPA recommends that the applicant clearly demonstrate why less damaging alternatives are not practicable, and that the Corps conduct a full analysis which evaluates not only geographic

alternatives, but design and technology alternatives which avoid impacts to aquatic resources to the maximum extent practicable.

Compliance with Other Environmental Standards – 40 CFR 230.10(b)

230.10(b)(1) of the CWA Section 404(b)(1) Guidelines states that "no discharge of dredged or fill material shall be permitted if it causes or contributes, after consideration of disposal site dilution and dispersion, to violation of any applicable State water quality standard." Based on information currently available, EPA believes this project may result in excursions from State water quality standards. Published studies indicate the activities proposed by the applicant, surface mining with valley fills in Central Appalachia, are strongly related to downstream biological impairment, as indicated by raw taxonomic data, individual metrics that represent important components of the macroinvertebrate assemblage, or when multi-metric indices are considered. These studies show that surface mining impacts on aquatic life are strongly correlated with ionic strength in the Central Appalachian stream networks. Downstream of valley fill overburden disposal sites, specific conductance and component ions can be elevated as much as 20 to 30 times over the background levels observed at un-mined sites. This increase in conductivity impairs aquatic life use, is persistent over time, and cannot be easily mitigated or removed from stream channels. EPA believes these aquatic life use impairments can rise to a level that may result in a violation of West Virginia's narrative water quality standard and may violate the CWA's antidegradation policy.

As stated above, the proposed project is located within the Dingess Run Subwatershed and the Guyandotte River Watershed. The Guyandotte River Watershed has an approved total maximum daily load (TMDL) for metals (Aluminum, Iron, Manganese) pH, and fecal coliform. Dingess Run has a WV Stream Condition Index (WVSCI) score of 33.6 that signifies a severely impaired water and a corresponding conductivity of 800 µS/cm. Data provided by the applicant shows that the unnamed tributary of George's Creek where the fill is to be placed has a WVSCI score of 93.2, and at the proposed location of the pond the WVSCI score was 89.7. The specific conductance measured at both locations was 380 µS/cm. Therefore, the benthic macroinvertebrate communities at these sampling locations in the unnamed tributary of George's Creek are in very good condition with only moderately elevated conductivity. The applicant's permit support documentation projects an increase of instream conductivity downstream of the proposed project to greater than 600 µS/cm after mining operations cease. This conclusion is somewhat inconsistent with EPA sampling downstream of similar operations within the Guyandotte River Watershed that has demonstrated levels of conductivity that 1000 µS/cm. As stated above, elevated conductivity levels are strongly correlated with adverse impacts on aquatic life in post-mining areas. Based on this information from similar mine sites, EPA is concerned that the project may adversely affect the naturally occurring and currently healthy aquatic community and that those impacts may be sufficient to rise to the level of an excursion from water quality standards. In addition, EPA is concerned that the projections provided in the applicant's permit support documentation may understate the project's predicted impacts on aquatic life and post-mining conductivity levels.

To show that this proposed project will not cause or contribute to a violation of water quality standards, including the narrative standard, EPA recommends that the applicant provide water quality monitoring and macroinvertabrate data from the adjacent George's Creek Surface Mine in the Freeze Fork drainage in order to demonstrate that the project will not lead to an

excursion of water quality standards. In addition, should a permit be warranted at this proposed project location, EPA recommends that the Corps condition the permit to require appropriate instream monitoring, effluent consideration of the discharge below the valley fills, and monitoring of the effluent and should include within the permit a mechanism to suspend the permit in the event that the monitoring demonstrates an excursion from the narrative water quality standards. This is to ensure that discharges associated with the project do not cause excursions from applicable water quality standards at points downstream from the valley fills, and thus are not inconsistent with that requirement in the Section 404(b)(1) Guidelines.

Significant Degradation of the Aquatic Ecosystem – 230.10(c)

The Guidelines prohibit any discharge of dredged or fill material which would cause or contribute to significant degradation of the aquatic ecosystem, with special emphasis placed on the persistence and permanence of effects, both individually and cumulatively. The applicant provided several examples of studies which they concluded "show that variability in the downstream impacts from upstream mining on aquatic communities is attributable to differences in the underlying geology and the extent to which good mining practices isolate strata that contribute to acid mine drainage and high conductivities. These negative impacts can be ameliorated by appropriate mining practices, which minimize exposure of certain mineral-rich strata to water." The applicant has not provided any information that details actions or design alternatives that are proposed to be taken on this proposed project to minimize such exposure and to reduce the likelihood of increased conductivity and potentially corresponding degradation of the aquatic ecosystem.

The applicant also has provided information relative to studies done in Martin County, Kentucky that "indicate water quality improvements with time and restoration of some functions." The Kentucky Division of Water has sampled sites in Venter's Branch in Martin County and in 2004 the data showed severe biological impairment, the specific conductance was greater than 2000 µS/cm and no mayflies were collected, despite adequate downstream habitat conditions 10 years after mining and valley fill construction. EPA sampled that same site in 2008 and 2009, now almost 15 years after mining concluded, and recorded specific conductance ~2500 µS/cm with a highly impaired benthic community and toxic conditions based on a 7d chronic *Ceriodaphnia dubia* test using EPA method 1002. These results raise concerns with the applicant's conclusions that water quality and functions return within a reasonably short period of time and indicate that persistent and potentially permanent significant degradation may occur.

A thorough analysis must be undertaken to determine if similar degradation will occur downstream of this proposed site. EPA recommends that the applicant conduct a reasonable potential analysis similar to that required by the National Pollutant Discharge Elimination System (NPDES) regulations and an analysis based upon available baseline and post-disturbance data from the adjacent Georges Creek Surface Mine in the Freeze Fork drainage. EPA further recommends that the applicant submit all biological and chemical data collected at the project site and the adjacent mine site to the Corps and EPA for review as part of the thorough analysis. This information can be used to determine the potential for significant degradation to occur, as well as whether this project will comply with the existing TMDLs, or cause or contribute to a violation of the State's water quality standards or antidegradation policy.

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Minimization and Compensation for Unavoidable Impacts – 230.10(d)

On March 31, 2008, EPA and the Corps issued revised regulations governing compensatory mitigation for authorized impacts to wetlands, streams, and other waters of the U.S. under Section 404 of the Clean Water Act. This regulation clearly affirms the requirement to adhere to the mitigation sequence to first avoid impacts to waters of the U.S., followed by minimizing any remaining impacts, and only then compensating for all unavoidable impacts. As stated earlier, EPA believes that based on the information contained in the PN and additional information as provided by the applicant, opportunities exist to further avoid and minimize impacts, and these opportunities should be explored before any discussion of compensation. However, the applicant provided a compensatory mitigation plan for review and therefore comments are offered.

The applicant proposes to restore 250 feet of intermittent stream channel associated with the temporary impacts of the project. In addition, the applicant proposes to create 5,600 linear feet of stream on-site, and enhance 4,000 linear feet of degraded perennial George's Creek. The applicant has applied the Interim Functional Assessment Approach (IFAA) method, and EPA's Rapid Bioassessment protocols. While the use of sediment ditches and NPDES outlets to create connectivity channels may somewhat compensate for loss of structural and hydrological function, it has not been established that these practices compensate for lost biological and chemical functions. If the biological and chemical functions are not properly restored, these created waters can end up being assessed as impaired and included on the 303(d) list and ultimately requiring TMDL development. The applicant states that chemical and biological parameters will be monitored, but suggests that those parameters will not be used to determine success. Absent restoration of biological and chemical function, it is not clear that the mitigation achieves functional replacement or mitigates the impacts from this project below significance.

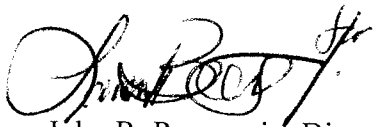
Any approved mitigation should ensure the replacement of the lost functions and services of the impacted streams and incorporate performance standards that include restoration of observable or measurable physical, chemical, and biological criteria within a reasonable timeframe to determine if the compensatory mitigation project meets its objectives. To ensure full compensation for lost functions, EPA encourages the mitigation project be in place prior to the discharge of fill material. Additionally, in making the determination under NEPA whether or not the proposed impacts to waters of the United States significantly affect the quality of the human environment, the Corps should consider the aforementioned recommendations on mitigation. The proposed compensation proposal may not fully mitigate the direct, indirect, and cumulative impacts within that watershed, to the point that a "finding of no significant impact" may not be supportable.

In conclusion, EPA believes that the project as proposed may not comply with the Section 404(b)(1) Guidelines and recommends that additional avoidance and minimization efforts be considered to reduce impacts to waters of the U.S. EPA believes that the project may adversely affect water quality, resulting in an impairment of the local and downstream aquatic life use, and that the project's direct and cumulative impacts may be persistent and permanent and cause or contribute to significant degradation of the aquatic ecosystem.

In light of these concerns, EPA believes that the project, as proposed, may result in substantial and unacceptable impacts to aquatic resources of national importance, as covered in

Part IV, paragraph 3(a), of the 1992 Clean Water Act Section 404(q) Memorandum of Agreement between the Environmental Protection Agency and the Department of the Army. Should you have any questions please feel free to contact Ms. Jessica Martinsen at 215-814-5144 or by email at martinsen.jessica@epa.gov.

Sincerely,



John R. Pomponio, Director
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